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INTRODUCTION

PILOT STUDY AND GENERAL PROCEDURE

114 After the acceptance of the Indian Education Research Project by the Papago Tribal Council in February, 1942, a three-month "pilot" study was conducted on the Papago Reservation by Dr. Laura Thompson, Project Co-ordinator, Dr. Ruth Underhill, and Dr. Alice Joseph. Dr. Underhill, anthropologist with the Bureau of Indian Affairs, had already made extensive field studies among the Papago, and Dr. Joseph had worked with the group for a year in the capacity of Reservation field physician. With the help of the Tribal Council, the Sells Parent-Teachers' Association, and the Indian Service personnel, especially D'Arcy McNickle, field representative, and the teachers at the Sells, Vamori, Gu Achi (Santa Rosa), Choulic, Schuchk (Santa Rosa Ranch), and Kohatk schools, the investigators tried out a number of different kinds of tests and field procedures. Based on results of the "pilot" field study, the following general procedure was adopted for the project as a whole:

125 The personalities and life-histories of a representative sample of children from each selected community were studied by means of a battery of psychological tests of both the projective and the performance types, supplemented by interviews with parents, teachers, and other community members and by medical examinations. The systematic study of individual personalities was limited to children of school age (six to eighteen years) because of their greater accessibility for the testing program. Much of the testing and interviewing was done by Indian Service teachers, trained and supervised by members of the research staff. Medical examinations and tests requiring experienced technicians for their administration, such as the Rorschach and the Thematic Apperception (adapted), were given by qualified staff personnel. The testing program is described in chapter xi.

122 Background data concerning the culture, the geographic environment, and the history were collected by anthropologists, who also drew on the literature, both published and unpublished, and on long-range plans prepared by the administrative personnel in co-operation with the Indians of each Agency.

Field findings were analyzed and interpreted by Project technicians at the University of Chicago.

SELECTION OF PAPAGO CHILDREN AND VILLAGES TO BE STUDIED

121 Owing to rather considerable regional differences in the degree of white contact on the Papago Reservation and to local variations in culture, it seemed advisable to select children from two areas, one representing a more acculture-

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rated, the other a less acculturated, group. Lack of housing and war restrictions on transportation eliminated some of the villages. The advantage of having the teachers work with the Indians whom they knew affected the selection of villages and the placement of trained personnel in the field.

After due consideration it was decided to study the children from two areas: (1) Baboquivari District and (2) Hickiwan and Gu Vo districts. The former was considered to be the more acculturated. These areas belonged to different dialect groups to which different personality traits were attributed by the Papago. In Baboquivari District investigation was limited to four related villages: Topawa, Komelik, Supi Oidak (Cold Fields), and Choulic. The selected villages include 76 households with a total of 127 school children attending local government day schools at Sells and Choulic, local Roman Catholic day schools at Topawa and San Miguel, or off-Reservation boarding schools at Tucson and Phoenix.

In Hickiwan and Gu Vo the investigation was limited to the related villages of Hickiwan, Emika, Stoa Pitk, Hotason Vo (Charco 27), Tatia Toak (Roadrunner), Vaya Chin (South Well), Gu Vo, and Kuakatch. Schuchuli should have been included in the testing program but was not, an oversight resulting from lack of knowledge of village relationships before the study was begun. However, it was included in the anthropological background study. The selected western villages include about 38 households with a total of 89 children, some of whom attended local day schools at Hickiwan or Gu Vo or off-Reservation schools at Ajo and Phoenix.

The selected Papago children totalled 200 and were about equally divided by sex. The number of children who actually took each test, however, varied considerably because of the migration of families for off-Reservation employment, which increased in frequency during the months of research. No children from Tatia Toak were tested because all of them were off the Reservation with their families, who were working in the cotton fields; none from Kuakatch were tested because they objected. Exact data are given in chapter xi, Table 1.

FIELD PROCEDURE—BABOQUIVARI

The testing program in the four selected Baboquivari villages was carried out during the latter half of 1942 by Dr. Alice Joseph, who gave medical examinations and Rorschach and Thematic Apperception tests, and by the teachers of Sells, Choulic, Topawa, and San Miguel schools. Rosamond B. Spicer, an anthropologist with field experience among the Yaqui Indians of Arizona and northern Mexico, conducted the anthropological background study from October, 1942, to July, 1943. She spent the first eight months in Topawa and the

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125 last two months in Sells, the Agency headquarters, where she was able to fill in important gaps in the material while writing her report.

123 After receiving permission from the village chief and the District Council, Mrs. Spicer with her two-year-old son settled in Topawa, the largest of the four villages. With the understanding that the regular fiestas should continue to be held there, she lived in the "Feast House," an adobe structure with dirt roof and dirt floor which was used by the Catholic portion of the village. As companion, housekeeper, nurse, and interpreter, she employed the daughter of a leading Topawa family, an intelligent young woman with a ready command of English.

Since the villagers were curious as to the reason why a white woman had come to live in their midst, Mrs. Spicer carefully explained her work to the village chief, emphasizing that she wished to study the language and history of the Papago and the way his people lived, so that other people might know more about them and so that the government might be better able to assist them. This explanation the chief passed on in his official capacity. She gave the same explanation to others who asked, often relating her study to the Project testing program being conducted simultaneously by schoolteachers. The intrusion became accepted as having official sanction, and, as personal relations and friendships were gradually built up, the intruder also came to be accepted.

Living in the village made it possible to attend village affairs, to visit people in their homes, and to hear gossip and opinions on the latest happenings. Trips were made to other villages for these purposes, though the acquaintance there was not so intimate. A continuous effort was made to learn the Papago language, and by the end of the stay simple conversations were understood. Since most people in Baboquivari know at least a little English, there was only occasional need for an interpreter. Spanish was spoken with some of the older people who did not know English.

After establishing a household, the round of everyday life led naturally to an understanding of how other people lived. The investigator attended village affairs such as church services, where she sang in both the Catholic and the Presbyterian choirs; cattle and horse roundups, for which the men were pleased to supply a riding horse and watched with delight the novice's attempts at being a cowboy; and fiestas, where she danced the night through and ate at the fiesta table. Visits with villagers in their homes, and their return visits, slowly became friendly and spontaneous and often led to participation in the local system of gift exchange. At first the talk centered about common interests, but, as time went on, interviews were directed, and people answered questions freely. They wanted to co-operate. There were many small ways in which their

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123 adults residing in the district during the period of study were able to speak English, and some of these had only slight mastery of it. For this reason, Miss Chesky made considerable effort to understand and speak some Papago. Her knowledge of the language never reached the point where interviews could actually be conducted in that medium, but she understood the gist of conversations sufficiently to furnish some check on interpreters. Furthermore, her halting attempts to speak Papago did much to create friendliness toward her. It was thus possible, without restraint on the part of anyone, to make long visits in homes where no English was spoken. On these visits, some information was picked up by very simple conversation in Papago, and much was observed regarding ordinary village happenings and regarding behavior patterns between the members of a household. Observations made but not understood were discussed later with English-speaking Papagos.

125 With the exception of the Grace Arthur Test, which was given by Mr. Rosen in the summer of 1942, the testing program in the Hickiwan–Gu Vo area was conducted in 1943 by Dr. Joseph and by Mr. and Mrs. Guthrie, Mr. and Mrs. Megivern, and Mrs. Byers, all Indian Service teachers.

ORGANIZATION OF THE MONOGRAPH

128 Part I, "People on the Desert," describes Papago society on the Reservation today, with a brief account of Papago geography, history, and prehistory. This part of the study is mainly the work of Rosamond B. Spicer. However, Jane Chesky made contributions to certain chapters; namely, sections of chapter iv which deal with the position of women and children in the society; sections of chapter vi dealing with certain theories of disease and curing, with the fiesta, and with the Magdalena pilgrimage; and sections of chapter vii on the relations of the Papago with other Indians, Mexicans, and traders.

Part II, "Growing Up on the Desert," describes the development of the average Papago child. This part of the study is based on detailed study of the western Hickiwan villages previously named, but comparisons have been drawn from consultation with field workers in other districts so that a more representative picture of the average Papago child's life might be drawn. It is the work of Jane Chesky, supplemented by comparative material on Baboquivari contributed by Rosamond B. Spicer.

Part III, "The Personality of the Papago Child," describes the results of the testing program carried on in the two research areas of the Reservation. This part of the study is the work of Alice Joseph, M.D.

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000 But knowledge of customs does not alone bring understanding of a people. Though customs and habits have their roots in the personalities that produce them, they may be manifestations of quite complex psychological needs and drives and have varying weight and significance. Knowledge and understanding which can remove not only surface frictions but also deeper tensions and firmly rooted prejudices require at least some acquaintance with the psychological forces which motivate behavior.

Long personal experience can indeed bring a knowledge of psychological reactions and motivations of individuals and groups which may help to remove at least some barriers to pleasant and peaceful interrelations. But scientific methods of analysis may perhaps show a shorter, and at the same time more reliable, way to this goal than personal experiences alone. Furthermore, scientific data can be passed on to greater numbers of people and in more nearly exact terms than can observations based only on personal experience.

125 While the preceding chapters tell about Papago land and life, the way in which Papago children grow up and are expected to develop, according to the pattern of their people, the following chapters will deal with actual personalities and with the problem of how far they may be influenced by particular living conditions and concepts of ideal and expected behavior patterns.

The choice of method upon which the psychological analysis of this study should be based was determined and partly limited by the war and the subsequent manpower and transportation shortages, and by a definite time limit in which the work had to be finished, but chiefly by the consideration that the methods selected should yield reliable results and at the same time be easily applicable and reapplicable for future use and checking. Besides, the objects of the study being children of a sociocultural background different from that of the research workers, the methods of analysis had to take into account, and to reduce, prejudicial and subjective interferences as much as possible.

On this basis various *tests* were chosen. Tests are limited to standardized material and thus largely eliminate subjective influences, at least at the administrative level. Moreover, only such tests were selected as require a minimum knowledge of English and a minimum acquaintance with concepts and symbols of modern white Western civilization. Still, it must be noted and taken into account that all the children of the western Papago communities except a few boarding-school pupils had to be tested in their native language through an interpreter, and about half the eastern group of children also needed an interpreter for some of the tests.

In the final analysis and interpretation of test results, objectivity rests largely on the efforts of the individual analyst to disregard preconceived ideas and to

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maintain an open mind. This factor of dependence upon the human element operates to some extent in most methods of scientific research. But, used with the necessary caution, tests can often convey useful psychological knowledge of greater objectivity in a shorter time than other methods, even under standardized conditions. 125

Since personality is complex and shows close interdependence of various traits and qualities of which one test would reveal only one part of one side, several tests were chosen, each of them concerned with a different aspect of personality. In the analysis all these tests were interrelated. In their interpretation they were integrated with historical, geographical, socioeconomic, and cultural facts known about the Papago.

Of the total battery of tests administered, the following have been analyzed, interpreted, and used as a basis for this study: two intelligence tests, the Grace Arthur Point Performance Scale (Short Form) and the Goodenough Draw-a-Man Test; Stewart's Emotional Reponse Test; Bavelas' Moral Ideology Test; a story designed to test concepts of immanent justice and animism; free drawings; Murray's Thematic Apperception Test (Revised); and Rorschach's Psychodiagnostic Test. In addition, the children were given physical examinations. Readers who wish full information regarding the tests, methods of administration, and results obtained from other Indian tribes will find sources of such information listed in the Bibliography. Here it is necessary only to give a short review of the tests, so that the reader may be aware of the potentialities—and the limitations—of the methods used.

The *Grace Arthur Point Performance Scale (Short Form)* is an intelligence test designed for children through the age of fifteen; its score is given as an intelligence quotient (I.Q.). The test consists of six separate parts of the puzzle, maze, and block-design type; one of these was omitted in the final scoring because it was charged with elements of white culture which proved to be incomprehensible and often confusing to Indian children. The greatest advantage of the Arthur test for this study was that it does not require the subject to use language.

The other intelligence test—the *Goodenough Draw-a-Man Test*—was used on children through the age of eleven. In this test the child is asked to draw a man to the best of his ability. Certain items in the picture are scored and evaluated as an I.Q.

In *Stewart's Emotional Response Test*, the child is asked, "Have you ever been happy?" If the answer is affirmative, the tester says, "Tell me about it." Three instances of happiness are requested. Then the child is asked to tell about occasions when he has been sad, afraid, or ashamed; to name the best

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125 thing and the worst thing that could happen to him. This test evokes selective associations which are largely limited by the child's actual experiences. It throws light not only upon the range and points of emphasis of these experiences but also upon the emotional attitudes of the child toward various situations, persons, and objects and the importance and kind of the role which they admittedly occupy in his mind.

In *Bavelas' Moral Ideology Test* the child is asked, "What could a boy (or girl) of your age do that would be a good thing, so that someone would praise him (or her) or be pleased?" and "Who would praise him (her) for doing it?" He is also asked, "What would be a bad thing to do, so that someone would blame him (her) or think badly of him (her)?" and "Who would blame him (her) for it?" Each question is repeated at least three times. The answers give information about the most common official moral standards of a group and, to some extent, the range of variation. The test also shows children's attitudes toward persons of their environment in their disciplinary role (i.e., as rewarding or punishing agents) rather than as people associated by the child with various emotions, as indicated in the Emotional Response Test.

The *story of the stolen melon and the ax* also deals with moral concepts. The child is told a story about two boys who steal a melon. One of them is punished on the spot. The other gets away but later cuts his foot with an ax. Four questions are asked: "Why do you think Paul's foot was cut?" "If Paul had not stolen the melon, would he have cut his foot?" "Did the ax know that Paul stole the melon?" "Does this happen only in stories or does it really happen?" This story was modeled on those devised by Piaget and others in order to reveal (1) whether a person's moral concepts contain a belief in "immanent justice," i.e., whether he thinks that misdeeds are inexorably followed by punishment through a justice other than that instituted by man; and (2) whether an object, like the ax, is believed to be animated and capable of thinking, feeling, and acting. It has been found that very young white children have both beliefs to a high degree and that each belief decreases as the child grows older. Thus the test gives information about a specific aspect of the personality which is interesting because of its cultural implications.

Two tests were used in which the child is asked to interpret standardized material so vague that he will "project" his own personal situation and character into it in carrying out instructions:

In *Murray's Thematic Apperception Test (Revised)* the child is shown a series of pictures which allow an almost unlimited variety of interpretations, and he is asked to tell a story about each picture. It is assumed that the child

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projects more or less of his conscious and subconscious emotions, attitudes, and experiences into his stories. 125

In *Rorschach's Psychodiagnostic Test* a sequence of standardized and meaningless "ink blots" is shown to the child, who is free to give as many interpretations of each whole blot or parts of it as he chooses. The test gives a complex picture of the basic personality and includes information about mental capacities and efficiency, emotional attitudes and drives, the balance of personality factors, and the defense mechanisms adopted against outside pressure or inner conflicts.

The Papago children were also asked to make *free drawings* in water color of any subjects they chose. Each child so tested was asked to draw eight pic-

TABLE 1

NUMBERS OF PAPAGO CHILDREN FROM TWO RESEARCH AREAS WHO TOOK THE VARIOUS TESTS

Test	Eastern Papago	Western Papago
Arthur	95	47
Goodenough	47	24
Emotional Response	95	54
Moral Ideology	90	54
Melon and Ax	95	54
Free drawings	88	42
Thematic Apperception	42	21
Rorschach	74	43

tures, which were analyzed for implications as to the degree to which Papago children have been influenced by white material culture.

As noted in the Introduction, it was not possible to give each test to every child. The numbers of children from the two Reservation areas who took each test are shown in Table 1.

Analysis and interpretation of test results have been made with reference to averages obtained for each tribal community studied. In these averages boys and girls in the age range six to eighteen have been included. Use of the same method for four other Indian tribes and in part also for a group of midwestern white children gives the basis of comparison necessary for the discernment of tribal characteristics.

Averages have also been obtained for each sex separately. Furthermore, in order to ascertain possible developmental trends, the test results have been analyzed with regard to age as well as sex groups. The sometimes unequal age distribution, the relatively small number of children tested, and uncertainty about exact birth dates, particularly in the western Papago communities, made

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125 it desirable to establish the following age groups: six to seven, eight to ten, eleven to thirteen, and fourteen to eighteen.[1] However, in the following chapters age and sex differences are noted only when they seem particularly significant.

121 No one is an individual unit moving independently through life. The in-
128 fluences of other people and their reactions to him will, to a greater or smaller degree, determine the course and strength of certain of his own psychological reactions and evoke new psychological equivalents for new situations of social contact.

Therefore, what we usually consider as characteristics of a group of people (i.e., those qualities more or less common to all members beyond their distinguishing individualities) will probably not be limited to superficial modes of expression and certain manners of behavior. This study is planned to do more than report a dialect or a particular way of eating or dressing; we have tried to uncover specific attitudes and reactions deeply rooted in the personalities.

Since the interest of this study is in the Papago not only as human beings or as individuals but also as Papago—and indeed the practical problem of the Papago minority as it exists in the state of Arizona today alone would justify such interest—the report of the psychological analysis will be concerned primarily with those attitudes, reactions, and personality traits which seem to belong specifically to the Papago tribe and to distinguish it from other Indian tribes and cultural groups.

1. The same age groups were used for all the tribes studies in the Indian Educational Research Project except the Sioux.

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Chapter XIV

THE INTELLIGENCE OF PAPAGO CHILDREN

KNOWING a people's mental approach to problems, the direction of their intellectual interests, and their capacity for organization of thought is a most important factor in understanding their personalities, because all human activity, in so far as it does not concern strictly biological matters, implies intellectual activity and shows its imprint.

In human contacts, if we are not to bring harm to others and to ourselves by requiring inadequate tasks or by misinterpreting incapacity as unwillingness, we must take into account degree and range of intelligence. In daily life this factor plays a considerable role in the establishment of interpersonal relations. Judgments of "intelligence" are usually made about the most casual acquaintances and are often tainted by vague or well-defined personal likes and dislikes: to dub a person "stupid" is frequently only to say that his opinions or way of life differ from one's own. In the complex of prejudices held by white persons against minorities, "inferior intelligence" has been one of the favorite themes.

During the past decades numerous tests have been devised which, by submitting the tested person to standardized conditions, try to eliminate subjective influences and to obtain comparable values for the degree of intelligence. Since these tests were standardized on white individuals and are chiefly concerned with those areas of mental activity which are considered of greatest importance and desirability in white Western civilization, they do not produce an absolute scale for intelligence but must be interpreted in relation only to those intellectual traits which they are designed to test. Even though such tests avoid personal subjective interferences, they are still open to varying degrees of cultural subjectivity.

There are, however, several tests which try to determine an "intelligence quotient" by the way in which the subject performs certain manual tasks. Being nonverbal and using material that is reasonably culture-free, these tests

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121 125 are evidently the best for use with individuals of a cultural background different from that in which the tests were standardized. Both intelligence tests selected for the research on Indian education—the Grace Arthur Point Performance Scale and the Goodenough Draw-a-Man Test—belong to this group.

125 153 The results obtained from Papago children with the Grace Arthur test show a considerable difference in the average I.Q.'s of the western and eastern districts studied. The test performance of the eastern children was on the average about equal to that of the white children on whom the test was standardized; the average I.Q. of the white children was 102.5; that of the eastern Papago children, 99.4 (see Table 3). In comparison with children of other Indian communities included in the research, the eastern Papago occupy exactly the median place. The much lower I.Q. of the western Papago children—86.9—puts them and one group of Navaho at the lower end of the scale.

153 Though this striking difference may be due partly to chance operating in the composition of the two Papago groups, other factors which may be influential should be taken into consideration. It is perhaps not a coincidence that, among three Navaho groups, the one with an I.Q. still lower than that of the western Papago was almost entirely composed of children who had never been in school. The majority of the western Papago children who took this test were listed as attending day school, but it is known that attendance is usually much more sporadic than in the eastern part of the Reservation. It is by no means an exception to hear of absences from school lasting several months, even years, and children often start school at the age of twelve or fourteen, attending perhaps for a total of one or two weeks during the whole school year. All these children are, however, listed as attending school. School training as a factor possibly influencing the results of the Grace Arthur test cannot therefore be disregarded in interpreting the test results, especially since the same factor is found combined with similar test results in another Indian group.

However, not only the western children's limited acquaintance with the handling of puzzles and mazes, such as are used in the Grace Arthur test, may have played a role in lowering the I.Q. The fact that western children are much less conditioned by previous training to give attention to and to be at ease regarding tasks which white persons require from them may have brought down the average I.Q. of this group. Moreover, it should be remembered that the western communities from which the children were chosen are distinguished from those of the eastern area by their particular resistance to white influence and especially to the introduction of schools. It is not known exactly how much the emotional attitude with which a person enters a test

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153 121 selection of specific instances, may be clues to the understanding of his personality, because the nature of admitted and accepted emotional outlets reveals some of the tracks into which, under ordinary circumstances, a person's behavior is socially directed. In the analysis of an individual personality such findings have a meaning not so much by themselves as in correlation with the results of other, more complex examinations. In the analysis of the average personality structure of a group of people, knowledge of openly admitted pleasures, fears, and reasons for sadness, anger, and shame has a greater value by itself, because it may show the extent and the character of common areas of emotional experiences and behavior tendencies and thus contribute insight into the psychological cohesion of the group.

Moreover, in group interrelations, it seems to the writer that the face value of emotional and moral standards as admitted by most members of a group is largely responsible for what to an outsider appear as "group characteristics." It represents the kind of psychological evidence on which he bases his judgments and prejudices as well as his behavior toward members of the group.

153 The answers of Papago children to questions about occasions when they were happy, sad, afraid, angry, or ashamed were highly evasive, but the responses did not appear to be deliberately invented or calculated either to please or to challenge the tester. All the answers were short and given without elaboration or explanation. Apparently, whenever the children felt objection to the whole test or parts of it, they did not respond at all instead of groping in their minds for a suitable answer. Among these were children with high and low I.Q.'s alike. Only a small proportion of the children—9 per cent in the western area and 10 per cent in the eastern—rejected the entire test; but a much higher percentage rejected questions about one or several specific emotions. The number of eastern children who made partial rejections was about twice that of western children making such rejections.

In view of the resistance which in chapter xiii was assumed to play a part in contacts between western Papago and whites, these findings would appear incongrous, if consideration were not given to a new factor of influence inherent in the test itself. The Emotional Response Test is verbal and requires at least a certain amount of understanding and speaking knowledge of English if given in this language. The test was given almost exclusively in English in the eastern communities, while the western children were tested in Papago with the help of interpreters.

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Considering the inhibitions a child may feel when he is asked to tell about his experiences in a language which he has not mastered, the differences in the number of rejections found in the two areas may indeed be based mainly

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159 In order to achieve personality pictures of these individuals, the following
125 method was adopted in each case. Information and observations regarding the social background, life-history, and overt behavior obtained from various sources were compiled by one of the anthropologists on the staff. The results of each test were scored, analyzed, and interpreted independently by other members of the research staff. In a general meeting this work was compared, discussed, and integrated. The final results thus obtained do not claim to be more than personality *sketches*. They offer much less complete knowledge of individuals than is commonly gained by psychological studies and observations extended over a fairly long period. They present, however, the first systematic approach to the discernment of Papago children's personalities by combined sociopsychological means, employing the fairly standardized method of tests. As such, though most of the psychodynamics in each case had to be left open to speculation, they offer aspects of the children's personality structures which, on the basis of their comparability, may serve as starting points for future, more intensive, studies.

In order to avoid ready identification of these children, fictitious names are used, and many details are omitted or slightly changed. Often, of course, this has somewhat blurred the picture.

RUTH

159 Ruth belongs to one of the leading families of her district, a family which presents the blending of white American socioeconomic influences and traditional Papago thought and belief in a very closely interwoven pattern. Both parents are wage-workers and receive regular salaries. All members of the family are Roman Catholics. The father's father, who holds unquestioned authority over all of them, is considered one of the most "progressive" leaders of the district and literally fought for the introduction of modern improvements, including the establishment of a government school. At the same time, he is a prominent ceremonial leader, famous for his supernatural powers. Ruth's father also seems to have this kind of ability. He is a jovial man, full of jokes, who may impress a stranger as being incapable of serious thought, but then may amaze him with sudden questions and statements of keen penetration. He had no formal schooling, though as a young man he made a considerable effort to obtain a little education and now speaks English rather well. After his mother's death several years ago, he and all the men of his family began to drink excessively. When he is drunk, he may become violent and aggressive even toward his nearest relatives.

Ruth's mother, who married into the village from another district and for a

members of a distinctive group -- in this case the Papago -- and, except for its non-legal status, amounts to a tribal roll. Although of potential value to tribal and federal administrators, the Papago population register is primarily a research tool. It is a "universe" of individuals who are the descendants of members of the Papago tribe in pre-reservation days. It is not confined, therefore, to the present residents of the Papago reservations, but includes identifiable Papagos wherever they may be living. A great deal of information can be secured from the register as it now stands, and changes in the register which will take place as it is maintained through time will provide additional data for analysis. Of even greater importance will be its use as a total population record from which samples may be drawn for a wide variety of social, economic, and health studies. It was, of course, an interest in studies of Indian health that led the National Cancer Institute to support the preparation of a Papago population register.

Methods and techniques used in the preparation of the register, together with full reports on the data secured, have been and will be published by Dr. Robert A. Hackenberg (1961). The problem of the reliability of the data, however, should be mentioned here.

No test has been conducted to determine the extent of over enumeration, under enumeration, or false enumeration. This will be done in the near future. Field

work was pursued until the emmeration of new people became so infrequent as to not justify additional expenditures. Records were searched until new data became so scanty or so difficult to handle, that additional work could not be justified.

Because we were seeking to secure data on all living Papagos, no matter where they lived, we could not use the relatively simple method of house-to-house emmeration perfected by the United States Census Office. We were forced, instead, to identify individuals in a kinship context and to interview informants to secure names, whereabouts, and other facts pertaining to members of kinship groups.

For this reason, and because we could not rely upon name, date of birth, sex and residence as fully reliable identifying criteria, our interviews were long, tedious and complicated. Reliability, we know, diminished in our reservation interview material as a direct function of the number of years an individual had been gone from the reservation. Data is weakest for Papagos resident outside of Arizona. Through the cooperation of the Arizona State Office of Vital Statistics, we were able to process Papago birth and death certificates originating in Arizona. We could not secure such information from other states where Papagos are not identified except as "Indian".

Data from records was available for only about two thirds of the individuals enumerated. Such data as kinship, present residence, village of origin, employment, and the educational level of adults, was secured entirely from field interviews. 127 125

A census defines the individuals to be enumerated in terms of their geographical location. A population register defines individuals on the basis of their membership in a specific group. One of our first tasks, therefore, was to define a Papago. The definition used by Dr. Hackenberg (1961) is given below. It can be made operational because we have records of the individual builders of dwellings on the three Papago reservations*, and because we have lineage data which give us the network of Papago kin ties. 127 121 101 128

1. A person will be considered a Papago Indian if he constructed a house within the limits of the Papago Reservations (Sells, San Xavier and Gila Bend), unless he fails to meet the terms of #3 below.

2. A person will be considered a Papago Indian if he is either a lineal or collateral relative of such a housebuilder unless he fails to meet the terms of #3 below.

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* Papagos do not live on the Gila Bend Reservation. Papagos living adjacent to the Reservation, however, are traditionally considered "reservation Papagos".

000 All these groups are minorities within wider American society. They contributed about 9 of every 10 cotton pickers in Pima county in 1950. They added up to a clear numerical majority over Anglo-American harvesters, farmers, and businessmen in the rural farm areas--but the Anglos retained all their dominant social and economic position. Anglo harvesters were less than half as numerous as the smallest non-Anglo picking group in the county, the Indians.[1]

PINAL COUNTY

The ethnic picture in Pinal county looks quite different. There Anglos have a slight edge over Spanish-speaking cotton pickers, with each group making up just over three-fourths of the total labor force.[2] This meant that minority groups probably comprised a majority of the inhabitants of the Pinal farming areas during the 1950 harvest season, but their numerical dominance was not nearly so great as in Pima county.

Negroes were somewhat more than half as numerous as Anglos and Spanish-speakers in Pinal county.[3] Papago Indians were the least numerous ethnic group among Pinal county pickers. The tribe vied with Negroes according to data of this study,[4] but the smallness of the sample obtained and the great likelihood that it contained proportionately too many Papagos suggests the actual number of Papagos in the county is perhaps one-tenth of the whole picking force. Indians of other tribes were an almost negligible quantity in Pinal county, only about 1 picker out of 100 being a non-Papago Indian.[5]

[464] [162]

PAPAGOS

464 125

Because of shortcomings of the sample from which the proportions of the four ethnic groups were derived, it would be well to have another basis for estimating the number of Papagos picking cotton in 1950. This can be done with other data gathered in this study.

It was possible to find out the number of Papagos employed on a good many farms where it was not possible to obtain an ethnic breakdown of the whole picking crew.

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[1] Based on 678 hands, of whom 55 or 8.1% were Anglos.
[2] Based on 1229 hands of known ethnic group, of whom 400 or 32.6% were Anglos; 383 or 31.2% were Spanish-speaking.
[3] Based on 1229 hands, of whom 217 or 17.7% were Negroes.
[4] Based on 1229 hands, of whom 211 or 17.2% were Papagos.
[5] Based on 1229 hands, of whom 18 or 1% were Indians of tribes other than Papago.

464 For this reason, 471 Papagos were found at work in the
162 cotton fields. Some other farms were found to employ
125 Papagos, but numbers could not be ascertained. At any rate, the 471 Desert People were 8.85% of all 5,319 pickers counted in this study. This may be accepted as a valid minimum proportion, since it does not include some farms where Papagos worked where the total number of pickers was obtained, but not the number of Papagos. A total of 536 Indians of all tribes were found on this same basis among 5,319 pickers counted in this study, or 10.1%. Correcting the propotion to allow for the unknown numbers of Papagos at work might mean 10% of the pickers actually were Desert People, with all Indians making up 12% or 13%.

464 The validity of this guess may be checked. In
162 Appendix I it was estimated Pima county hired 2,858 pick-
128 ers, or which number 10% is 286 Papagos. The 121 Papagos in the ethnic sample in Pima county worked on 13 farms, which were 61.9% of Pima county farms hiring Desert People. If other farms hired proportionate numbers, 196 were hired on farms studied. These included 70% of the Pima county cotton planting, so all farms in the county planting cotton should have hired some 280 Papagos. This is within 6 of the 286 figure (10% of the estimated total of pickers) so the two estimates are very close, indicating accuracy.

464 NUMBER OF PAPAGO COTTON PICKERS, 1950
162

		Papago pickers (8.85%)	Papagos off-res. (x 2.3)	Papago pickers (10%)	off-reservs.
361	Pickers needed per day to harvest Pinal-Pima county crop in 96 days	16,095	1,424	3,275	1,610 3,703
	Average number of pickers hired per day, Oct.-Dec. (ASES data)	19,251	1,704	3,919	1,925 4,428
	Average pickers hired per day Oct.-Dec. (Data of this study)	19,764	1,748	4,025	1,976 4,545
	Peak number of pickers hired per day in any week. (ASES data)	22,140	1,959	4,496	2,214 5,092

On the basis of these figures it seems safe to say at least 1,700 Papagos picked cotton in 1950. And this meant some 2,750 Desert People lived in farm labor camps off their reservations. But the most likely estimate appears to be approximately 2,000 Papagos harvested cotton and about 4,500 in all lived in labor camps in Pima and Pinal counties in 1950.

[p136 contains no textual material]